



#12

SEQUENCE LISTING

<110> Weber, Patricia C.
Reichert, Paul
Madison, Vincent S.
Wyss, Daniel
Yao, Nanhua
Liu, Dingjiang
Gesell, Jennifer

<120> Hepatitis C Virus NS3 Helicase Fragments

<130> ID01152 US

<140> US 09/825,423

<141> 2001-04-03

<150> US 60/194,419

<151> 2000-04-04

<160> 16

<170> PatentIn Ver. 2.1

<210> 1

<211> 631

<212> PRT

<213> Hepatitis C virus

<400> 1

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Ile	Ile	Thr	Ser	Leu	Thr	Gly	Arg	Asp	Lys	Asn	Gln	Val	Glu	Gly	Glu
			20					25					30		
Val	Gln	Ile	Val	Ser	Thr	Ala	Thr	Gln	Thr	Phe	Leu	Ala	Thr	Cys	Ile
			35				40						45		
Asn	Gly	Val	Cys	Trp	Thr	Val	Tyr	His	Gly	Ala	Gly	Thr	Arg	Thr	Ile
	50					55					60				
Ala	Ser	Pro	Lys	Gly	Pro	Val	Ile	Gln	Met	Tyr	Thr	Asn	Val	Asp	Gln
	65				70					75					80
Asp	Leu	Val	Gly	Trp	Pro	Ala	Pro	Gln	Gly	Ser	Arg	Ser	Leu	Thr	Pro
				85					90					95	
Cys	Thr	Cys	Gly	Ser	Ser	Asp	Leu	Tyr	Leu	Val	Thr	Arg	His	Ala	Asp
			100					105					110		
Val	Ile	Pro	Val	Arg	Arg	Arg	Gly	Asp	Ser	Arg	Gly	Ser	Leu	Leu	Ser
			115				120					125			
Pro	Arg	Pro	Ile	Ser	Tyr	Leu	Lys	Gly	Ser	Ser	Gly	Gly	Pro	Leu	Leu
	130					135					140				
Cys	Pro	Ala	Gly	His	Ala	Val	Gly	Leu	Phe	Arg	Ala	Ala	Val	Cys	Thr
	145				150					155					160
Arg	Gly	Val	Thr	Lys	Ala	Val	Asp	Phe	Ile	Pro	Val	Glu	Asn	Leu	Glu

Ala	Gly	Cys	Ala	Trp	Tyr	Glu	Leu	Thr	Pro	Ala	Glu	Thr	Thr	Val	Arg
			500					505					510		
Leu	Arg	Ala	Tyr	Met	Asn	Thr	Pro	Gly	Leu	Pro	Val	Cys	Gln	Asp	His
		515					520					525			
Leu	Glu	Phe	Trp	Glu	Gly	Val	Phe	Thr	Gly	Leu	Thr	His	Ile	Asp	Ala
	530					535					540				
His	Phe	Leu	Ser	Gln	Thr	Lys	Gln	Ser	Gly	Glu	Asn	Phe	Pro	Tyr	Leu
545					550					555					560
Val	Ala	Tyr	Gln	Ala	Thr	Val	Cys	Ala	Arg	Ala	Gln	Ala	Pro	Pro	Pro
				565					570					575	
Ser	Trp	Asp	Gln	Met	Trp	Lys	Cys	Leu	Ile	Arg	Leu	Lys	Pro	Thr	Leu
			580					585					590		
His	Gly	Pro	Thr	Pro	Leu	Leu	Tyr	Arg	Leu	Gly	Ala	Val	Gln	Asn	Glu
		595					600					605			
Val	Thr	Leu	Thr	His	Pro	Ile	Thr	Lys	Tyr	Ile	Met	Thr	Cys	Met	Ser
	610					615					620				
Ala	Asp	Leu	Glu	Val	Val	Thr									
625					630										

<210> 2
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 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Mutated Hepatitis C virus peptide

<400> 2
 Ser Asp Gly Lys
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<210> 3
 <211> 148
 <212> PRT
 <213> Hepatitis C virus

<400> 3															
Gly	Ser	His	Met	Ser	Pro	Val	Phe	Thr	Asp	Asn	Ser	Ser	Pro	Pro	Ala
1				5					10				15		
Val	Pro	Gln	Ser	Phe	Gln	Val	Ala	His	Leu	His	Ala	Pro	Thr	Gly	Ser
			20					25					30		
Gly	Lys	Ser	Thr	Lys	Val	Pro	Ala	Ala	Tyr	Ala	Ala	Gln	Gly	Tyr	Lys
		35					40					45			
Val	Leu	Val	Leu	Asn	Pro	Ser	Val	Ala	Ala	Thr	Leu	Gly	Phe	Gly	Ala
	50					55					60				

Tyr Met Ser Lys Ala His Gly Val Asp Pro Asn Ile Arg Thr Gly Val
 65 70 75 80
 Arg Thr Ile Thr Thr Gly Ser Pro Ile Thr Tyr Ser Thr Tyr Gly Lys
 85 90 95
 Phe Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Ile Ile Ile
 100 105 110
 Cys Asp Glu Cys His Ser Thr Asp Ala Thr Ser Ile Leu Gly Ile Gly
 115 120 125
 Thr Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val Leu
 130 135 140
 Ala Thr Ala Thr
 145

<210> 4
 <211> 142
 <212> PRT
 <213> Hepatitis C virus

<400> 4
 Gly Ser His Met Gly Ser Val Thr Val Pro His Pro Asn Ile Glu Glu
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 Val Ala Leu Ser Thr Thr Gly Glu Ile Pro Phe Tyr Gly Lys Ala Ile
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 Pro Leu Glu Val Ile Lys Gly Gly Arg His Leu Ile Phe Cys His Ser
 35 40 45
 Lys Lys Lys Cys Asp Glu Leu Ala Ala Lys Leu Val Ala Leu Gly Ile
 50 55 60
 Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ser Val Ile Pro Thr
 65 70 75 80
 Asn Gly Asp Val Val Val Val Ala Thr Asp Ala Leu Met Thr Gly Phe
 85 90 95
 Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Thr Ser Asp Gly Lys
 100 105 110
 Pro Gln Asp Ala Val Ser Arg Thr Gln Arg Arg Gly Arg Thr Gly Arg
 115 120 125
 Gly Lys Pro Gly Ile Tyr Arg Phe Val Ala Pro Gly Glu Arg
 130 135 140

<210> 5
 <211> 288
 <212> PRT
 <213> Hepatitis C virus

<400> 5

Gly	Ser	His	Met	Ser	Pro	Val	Phe	Thr	Asp	Asn	Ser	Ser	Pro	Pro	Ala
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Val	Pro	Gln	Ser	Phe	Gln	Val	Ala	His	Leu	His	Ala	Pro	Thr	Gly	Ser
			20					25					30		
Gly	Lys	Ser	Thr	Lys	Val	Pro	Ala	Ala	Tyr	Ala	Ala	Gln	Gly	Tyr	Lys
		35					40					45			
Val	Leu	Val	Leu	Asn	Pro	Ser	Val	Ala	Ala	Thr	Leu	Gly	Phe	Gly	Ala
	50					55					60				
Tyr	Met	Ser	Lys	Ala	His	Gly	Val	Asp	Pro	Asn	Ile	Arg	Thr	Gly	Val
65					70					75					80
Arg	Thr	Ile	Thr	Thr	Gly	Ser	Pro	Ile	Thr	Tyr	Ser	Thr	Tyr	Gly	Lys
				85					90					95	
Phe	Leu	Ala	Asp	Gly	Gly	Cys	Ser	Gly	Gly	Ala	Tyr	Asp	Ile	Ile	Ile
			100					105					110		
Cys	Asp	Glu	Cys	His	Ser	Thr	Asp	Ala	Thr	Ser	Ile	Leu	Gly	Ile	Gly
		115					120					125			
Thr	Val	Leu	Asp	Gln	Ala	Glu	Thr	Ala	Gly	Ala	Arg	Leu	Val	Val	Leu
	130					135					140				
Ala	Thr	Ala	Thr	Pro	Pro	Gly	Ser	Val	Thr	Val	Pro	His	Pro	Asn	Ile
145					150					155					160
Glu	Glu	Val	Ala	Leu	Ser	Thr	Thr	Gly	Glu	Ile	Pro	Phe	Tyr	Gly	Lys
				165					170					175	
Ala	Ile	Pro	Leu	Glu	Val	Ile	Lys	Gly	Gly	Arg	His	Leu	Ile	Phe	Cys
			180					185					190		
His	Ser	Lys	Lys	Lys	Cys	Asp	Glu	Leu	Ala	Ala	Lys	Leu	Val	Ala	Leu
		195					200					205			
Gly	Ile	Asn	Ala	Val	Ala	Tyr	Tyr	Arg	Gly	Leu	Asp	Val	Ser	Val	Ile
	210					215					220				
Pro	Thr	Asn	Gly	Asp	Val	Val	Val	Val	Ala	Thr	Asp	Ala	Leu	Met	Thr
225					230					235					240
Gly	Phe	Thr	Gly	Asp	Phe	Asp	Ser	Val	Ile	Asp	Cys	Asn	Thr	Ser	Asp
				245					250					255	
Gly	Lys	Pro	Gln	Asp	Ala	Val	Ser	Arg	Thr	Gln	Arg	Arg	Gly	Arg	Thr
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Gly	Arg	Gly	Lys	Pro	Gly	Ile	Tyr	Arg	Phe	Val	Ala	Pro	Gly	Glu	Arg
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<210> 6

<211> 241
 <212> PRT
 <213> Hepatitis C virus

<400> 6
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 20 25 30
 Gly Lys Ser Thr Lys Val Pro Ala Ala Tyr Ala Ala Gln Gly Tyr Lys
 35 40 45
 Val Leu Val Leu Asn Pro Ser Val Ala Ala Thr Leu Gly Phe Gly Ala
 50 55 60
 Tyr Met Ser Lys Ala His Gly Val Asp Pro Asn Ile Arg Thr Gly Val
 65 70 75 80
 Arg Thr Ile Thr Thr Gly Ser Pro Ile Thr Tyr Ser Thr Tyr Gly Lys
 85 90 95
 Phe Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Ile Ile Ile
 100 105 110
 Cys Asp Glu Cys His Ser Thr Asp Ala Thr Ser Ile Leu Gly Ile Gly
 115 120 125
 Thr Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val Leu
 130 135 140
 Ala Thr Ala Thr Pro Pro Gly Ser Gly Met Phe Asp Ser Ser Val Leu
 145 150 155 160
 Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr Glu Leu Thr Pro Ala
 165 170 175
 Glu Thr Thr Val Arg Leu Arg Ala Tyr Met Asn Thr Pro Gly Leu Pro
 180 185 190
 Val Cys Gln Asp His Leu Glu Phe Trp Glu Gly Val Phe Thr Gly Leu
 195 200 205
 Thr His Ile Asp Ala His Phe Leu Ser Gln Thr Lys Gln Ser Gly Glu
 210 215 220
 Asn Phe Pro Tyr Leu Val Ala Tyr Gln Ala Thr Val Cys Ala Arg Ala
 225 230 235 240
 Gln

<210> 7
 <211> 4
 <212> PRT
 <213> Artificial Sequence
 <220>

<223> Mutated Hepatitis C virus peptide

<400> 7

Gln Gly Gly Ala

1

<210> 8

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Mutated Hepatitis C virus peptide

<400> 8

Arg Gly Ser Thr

1

<210> 9

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Mutated Hepatitis C virus peptide

<400> 9

Arg Gly Pro Gly

1

<210> 10

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Mutated Hepatitis C virus peptide

<400> 10

Ser Lys Gly Glu

1

<210> 11

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Mutated Hepatitis C virus peptide

<400> 11

Glu Gln Gly Ala

1

<210> 12
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Mutated Hepatitis C virus peptide

<400> 12
Arg Asn Asn Gln
1

<210> 13
<211> 4
<212> PRT
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<220>
<223> Mutated Hepatitis C virus peptide

<400> 13
Ala Asp Gly Ser
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<210> 14
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Mutated Hepatitis C virus peptide

<400> 14
Cys Asp Gly Leu
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<210> 15
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Mutated Hepatitis C virus primer

<400> 15
atcaggaccg ggggtggaaac aattaccact ggc

33

<210> 16
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Mutated Hepatitis C virus primer

<400> 16
gccagtggta attgtttcca ccccggtcct gat

33